

Abstract of the Disclosure

Circuits and methods for a delta-sigma analog-to-digital converter having a variable oversample ratio to produce a constant fullscale output at reduced circuit complexity, die area, and power dissipation are provided. 5 The circuits and methods consist of scaling the digital input to the digital filter with a decoder whose size depends on the number of oversample ratios allowed by the analog-to-digital converter. The digital filter is 10 implemented as a comb filter having a cascade of N integrators and N differentiators, where N is the order of the digital filter. The size of the differentiators is equal to the number of bits used as output for the analog-to-digital converter, which is smaller than the 15 size of the integrators and the number of bits produced by the digital filter.